Amendments to the Claims:

This listing of claims replaces all prior versions, and listing, of claims in the application.

Listing of Claims:

Claim 1. (Cancelled)

Claim 2. (Previously Presented): The antimicrobial additive according to claim 63 wherein the antimicrobial metal ion is selected from the group consisting of silver, copper, zinc, tin, gold, mercury, lead, iron, cobalt, nickel, manganese, arsenic, antimony, bismuth, barium, cadmium, chromium, thallium and combinations thereof.

Claim 3. (Previously Presented): The antimicrobial additive according to claim 63 wherein the antimicrobial metal ion is silver, zinc, copper or a combination of any two or all three of the foregoing.

Claims 4-5. (Cancelled)

Claim 6. (Previously Presented): The antimicrobial additive according to claim 63 wherein the ceramic carrier is selected from the group consisting of zeolites, hydroxyapatites, and zirconium phosphates.

Claim 7. (Previously Presented): The antimicrobial additive according to claim 63 wherein the antimicrobial agent is a zeolite that contains silver ions alone or in combination with zinc ions or copper ions or both.

Claims 8-9. (Cancelled)

Claim 10. (Previously Presented): The antimicrobial additive according to claim 63 wherein the hydrophilic polymer is a polymer with water absorption at equilibrium of at least about 20% by weight.

Claim 11. (Previously Presented): The antimicrobial additive according to claim 63 wherein the hydrophilic polymer is selected from the group consisting of polyhydroxyethyl methacrylate, polyacrylamide, N–vinyl-2-pyrrolidinone, polysaccharides, polylactic acid, polyamide and polyurethane.

Claim 12. (Previously Presented): The antimicrobial additive according to claim 11 wherein the hydrophilic polymer is polyurethane.

Claim 13. (Cancelled)

Claim 14. (Previously Presented): The antimicrobial additive according to claim 63 wherein the microparticles contain from 10 to 200 parts by weight of antimicrobial agent based upon 100 parts by weight of hydrophilic polymer.

Claim 15. (Previously Presented): The antimicrobial additive according to claim 63 wherein the microparticles contain from 20 to 100 parts by weight of antimicrobial agent based upon 100 parts by weight of hydrophilic polymer.

Claim 16. (Prevoiusly Presented): The antimicrobial additive according to claim 63 further comprises an inorganic discoloration inhibiting agent.

Claim 17. (Previously Presented): The antimicrobial additive according to claim 16 wherein said discoloration inhibiting agent is an ammonium compound.

Claim 18. (Previously Presented): The antimicrobial additive according to claim 16 wherein the inorganic discoloration inhibiting agent comprises ion-exchanged ammonium ions contained within said antimicrobial agent.

Claim 19. (Previously Presented): The antimicrobial additive according to claim 63 further comprising a dopant agent.

Claim 20. (Previously Presented): The antimicrobial additive according to claim 19, wherein said dopant is an inorganic sodium salt.

Claim 21. (Previously Presented): The antimicrobial additive according to claim 20, wherein said dopant is sodium nitrate.

Claims 22-37. (Cancelled)

Claim 38. (Previously Presented): A polymer composition comprising a) an antimicrobial additive comprising 10 to 1000 parts by weight of at least one ion-exchange type antimicrobial agent comprising a ceramic carrier and ion-exchanged antimicrobial metal ions and 100 parts by weight of a hydrophilic polymer having a water absorption at equilibrium of at least 5% by weight, the extent of water absorption being sufficient to allow for ion transport within and through the hydrophilic polymer so as to facilitate the ion-exchange and subsequent release of an antimicrobially effective amount of the antimicrobial metal ions, said antimicrobial additive in the form of microparticles of the hydrophilic polymer having dispersed therein multiple particles of the at least one ion-exchange type antimicrobial agent, said microparticles having an average diameter of from about 15μ to about 300μ and b) a matrix polymer wherein the hydrophilic microparticles are dispersed as a discrete phase within the matrix polymer.

Claim 39. (Cancelled)

Claim 40. (Previously Presented): The polymer composition of claim 38 wherein the matrix polymer is an addition polymer selected from the group consisting of polypropylene, polyethylene, polystyrene, polyvinylchloride, ABS, SAN, epoxy resins and polytetrafluoroethylene.

Claim 41. (Withdrawn): The polymer composition of claim 38 wherein the matrix polymer is a condensation polymer selected from the group consisting of polyurethanes, polycarbonates, polyesters, polyamides, polyimides and silicone polymers.

Claim 42. (Original): The polymer composition of claim 38 wherein the matrix polymer is not a hydrophilic polymer.

Claim 43. (Withdrawn): The polymer composition of claim 38 wherein the matrix polymer is a hydrophilic polymer whose hydrophilic property is different from that of the hydrophilic polymer used to make the antimicrobial hydrophilic polymer microparticle.

Claim 44. (Cancelled)

Claim 45. (Original): The polymer composition of claim 38 wherein the matrix polymer is a polymer blend.

Claims 46-50 (Cancelled)

Claim 51. (Previously Presented): The antimicrobial additive according to claim 63 wherein the mean average diameter is from about 15μ to about 200μ.

Claim 52. (Previously Presented): The antimicrobial additive according to claim 63 wherein the mean average diameter is from about 50μ to about 200μ.

Claim 53. (Currently Amended): The polymer composition according to claim 38 wherein the mean average diameter is from about 15μ to about 200μ[[μ]].

Claim 54. (Previously Presented): The polymer composition according to claim 38 wherein the mean average diameter is from about 50μ to about200μ.

Claim 55. (Cancelled)

Claim 56. (Previously Presented): The polymer composition according to claim 38 wherein the antimicrobial agent comprises a ceramic carrier selected from the group consisting of zeolites, hydroxyapatites, and zirconium phosphates having ion-exchanged antimicrobial metal ions.

Claims 57 - 59. (Cancelled)

Claim 60. (Previously Presented): The antimicrobial additive according to claim 64 wherein the antimicrobial agent is coated with the hydrophilic polymer and the coating has a thickness of 1μ to 10μ.

Claim 61. (Previously Presented): The polymer composition according to claim 73 wherein the antimicrobial agent is coated with the hydrophilic polymer and the coating has a thickness of 1μ to 10μ.

Claim 62. (Cancelled)

Claim 63 (Previously Presented): An antimicrobial additive comprising 10 to 1000 parts by weight of at least one ion-exchange type antimicrobial agent comprising a ceramic carrier and ion-exchanged antimicrobial metal ions and 100 parts by weight of a hydrophilic polymer having a water absorption at equilibrium of at least 5% by weight, the extent of water absorption being sufficient to allow for ion transport within and through the hydrophilic polymer so as to facilitate the ion-exchange and subsequent release of an antimicrobially effective amount of the antimicrobial metal ions, said antimicrobial additive in the form of microparticles of the hydrophilic polymer having dispersed therein multiple particles of the at least one ion-exchange type antimicrobial agent, said microparticles having an average diameter of from about 15μ to about 300μ.

Claim 64. (Previously Presented) An antimicrobial additive comprising a discrete particle of an ion-exchange type antimicrobial agent comprising a ceramic carrier and ion-exchanged

antimicrobial metal ions encapsulated in a hydrophilic polymer having a water absorption at equilibrium of at least 5% by weight and sufficient to allow for ion transport within and through the hydrophilic polymer so as to facilitate the ion-exchange and subsequent release of an antimicrobially effective amount of the antimicrobial metal ions, the thickness of the hydrophilic polymer coating being from about 1μ to about 15μ, said antimicrobial additive having a mean average particle size of about 300μ or less and a weight ratio of the antimicrobial agent to the hydrophilic polymer of from 1:100 to 1000:100.

Claim 65. (Cancelled)

Claim 66. (Previously Presented): The antimicrobial additive according to claim 64 wherein the antimicrobial metal ion is selected from the group consisting of silver, copper, zinc, tin, gold, mercury, lead, iron, cobalt, nickel, manganese, arsenic, antimony, bismuth, barium, cadmium, chromium, thallium and combinations thereof.

Claim 67. (Previously Presented): The antimicrobial additive according to claim 64 wherein the antimicrobial metal ion is silver, zinc, copper or a combination of any two or all three of the foregoing.

Claim 68. (Previously Presented): The antimicrobial additive according to claim 64 wherein the ceramic carrier is selected from the group consisting of zeolites, hydroxyapatites, and zirconium phosphates.

Claim 69. (Previously Presented): The antimicrobial additive according to claim 64 wherein the antimicrobial agent is a zeolite that contains silver ions alone or in combination with zinc ions or copper ions or both.

Claim 70. (Previously Presented): The antimicrobial additive according to claim 64 wherein the hydrophilic polymer is a polymer with water absorption at equilibrium of at least about 20% by weight.

Claim 71. (Previously Presented): The antimicrobial additive according to claim 64 wherein the hydrophilic polymer is selected from the group consisting of polyhydroxyethyl methacrylate, polyacrylamide, N–vinyl-2-pyrrolidinone, polysaccharides, polylactic acid, polyamide and polyurethane.

Claim 72. (Previously Presented): The antimicrobial additive according to claim 64 wherein the hydrophilic polymer is polyurethane.

Claim 73. (Previously Presented): A polymer composition comprising a) an antimicrobial additive comprising a discrete particle of an ion-exchange type antimicrobial agent comprising a ceramic carrier and ion-exchanged antimicrobial metal ions encapsulated in a hydrophilic polymer having a water absorption at equilibrium of at least 5% by weight and sufficient to allow for ion transport within and through the hydrophilic polymer so as to facilitate the ion-exchange and subsequent release of an antimicrobially effective amount of the antimicrobial metal ions, the thickness of the hydrophilic polymer coating being from about 1μ to about 15μ, said antimicrobial additive having a mean average particle size of about 300μ or less and a weight ratio of the antimicrobial agent to the hydrophilic polymer of from 1:100 to 1000:100 and b) a matrix polymer wherein the antimicrobial additive particles are dispersed as a discrete phase within the matrix polymer.

Claim 74. (Cancelled)

Claim 75. (Previously Presented): The polymer composition according to claim 73 wherein the ceramic carrier is selected from the group consisting of zeolites, hydroxyapatites, and zirconium phosphates.

Claim 76. (Previously Presented): The polymer composition according to claim 73 wherein the antimicrobial metal ion is selected from the group consisting of silver, copper, zinc, tin, gold,

mercury, lead, iron, cobalt, nickel, manganese, arsenic, antimony, bismuth, barium, cadmium, chromium, thallium and combinations thereof.

Claim 77. (Previously Presented): The polymer composition according to claim 73 wherein the antimicrobial metal ion is silver, zinc, copper or a combination of any two or all three of the foregoing.

Claim 78. (Previously Presented): The polymer composition according to claim 73 wherein the antimicrobial agent is a zeolite that contains silver ions alone or in combination with zinc ions or copper ions or both.

Claim 79. (Previously Presented): The polymer composition according to claim 73 wherein the hydrophilic polymer is a polymer with water absorption at equilibrium of at least about 20% by weight.

Claim 80. (Previously Presented): The polymer composition according to claim 73 wherein the hydrophilic polymer is selected from the group consisting of polyhydroxyethyl methacrylate, polyacrylamide, N–vinyl-2-pyrrolidinone, polysaccharides, polylactic acid, polyamide and polyurethane.

Claim 81. (Previously Presented): The polymer composition of claim 73 wherein the matrix polymer is an addition polymer selected from the group consisting of polypropylene, polyethylene, polystyrene, polyvinylchloride, ABS, SAN, epoxy resins and polytetrafluoroethylene.

Claim 82. (Withdrawn): The polymer composition of claim 73 wherein the matrix polymer is a condensation polymer selected from the group consisting of polyurethanes, polycarbonates, polyesters, polyamides, polyimides and silicone polymers.

Claim 83. (Withdrawn): The polymer composition of claim 73 wherein the matrix polymer is a hydrophilic polymer whose hydrophilic property is different from that of the hydrophilic polymer encapsulant used to make the microcapsule.

Claim 84. (Previously Presented): The polymer composition according to claim 38 wherein the antimicrobial metal ion is selected from the group consisting of silver, copper, zinc, tin, gold, mercury, lead, iron, cobalt, nickel, manganese, arsenic, antimony, bismuth, barium, cadmium, chromium, thallium and combinations thereof.

Claim 85. (Previously Presented): The polymer composition according to claim 38 wherein the antimicrobial metal ion is silver, zinc, copper or a combination of any two or all three of the foregoing.